

physics into war research, into war industry, and into training staffs as will be necessary to prevent serious impairment of the critical war services to be rendered by these agencies.

That copies of these resolutions be sent to the Chairman

of the War Manpower Commission, to the Secretary of War, to the Secretary of the Navy, to the Chairman of the War Production Board, to the Director of the Office of Scientific Research and Development and to the Chairman of the National Defense Research Committee.

SCIENTIFIC NOTES AND NEWS

DR. KARL T. COMPTON, president of the Massachusetts Institute of Technology, received the doctorate of laws from Tufts College at the first mid-winter graduation ceremonies held on January 26.

RUTGERS UNIVERSITY at the recent graduation ceremonies conferred an honorary degree on Dr. Selman A. Waksman, professor of soil microbiology at the Agricultural Experiment Station of the university.

DR. RAYMUND L. ZWEMER, of the Columbia University Medical School, has been elected an honorary member of the Sociedad de Medicina de Montevideo, Uruguay, and a corresponding member of the Sociedad Argentina de Biología of the Asociación Médica Argentina.

THE James Turner Morehead Medal, awarded annually by the International Acetylene Association for "outstanding work in the acetylene industry," was presented at a dinner given on January 25, at the Union Club, New York City, to Harry E. Newell, assistant chief engineer of the National Board of Fire Underwriters.

DR. L. CHAS. RAIFORD, professor of organic chemistry at the State University of Iowa, was honored at a testimonial dinner recently given by Alpha Chi Sigma. At the close of the program he was presented with a watch by his former students and members of the local chapter.

A DINNER in honor of Richard S. Kirby, associate professor of engineering drawing and for the past twenty-eight years a member of the faculty of Yale University, was given recently at a meeting of engineers in the Faculty Club. Dr. Kirby was presented with a book of letters and messages from faculty members and friends outside the university by Hardy Cross, professor of civil engineering. A message to Professor Kirby from President Charles Seymour reads: "Over the years you have earned the gratitude, respect and affection of Yale. We remember your devotion as a teacher, the genius with which you have introduced the vital human element into the fundamentals of engineering, your contribution to human safety by the study of traffic under new conditions, your influence in maintaining the interest of alumni in Yale engineering."

THE Stephen Hales Prize of the American Society of Plant Physiologists, awarded every other year for

distinguished contributions to plant physiology, is given this year to Dr. C. B. van Niel, of Stanford University, in recognition of fundamental and distinguished contributions to the science of plant physiology. The citation reads in part, "an inspiring teacher, whose detailed knowledge and critical advice have been widely and fruitfully sought; whose keen intuitions and patient experiments, governed always by the most rigid and exacting experimental standards, have led him to generalizations of great importance for the comprehension of the synthetic processes of higher and lower plants."

JOHN W. BUCH, assistant professor in the department of mining engineering of the Pennsylvania State College, has been named chief of the Coal Economics Division of the U. S. Bureau of Mines.

DR. G. W. WOOLLEY, a member of the research staff, has been elected vice-president of the Roscoe B. Jackson Memorial Laboratory at Bar Harbor, Maine. Dr. C. C. Little, president of the corporation, following a meeting of the board of directors, announced that an executive committee consisting of the vice-president and business manager, with Dr. G. D. Snell, of the laboratory staff, as chairman, had been formed to assist in the administration of the laboratory. Dr. Cornelius P. Rhoads, director of the Memorial Hospital in New York, was elected a member of the board of directors. At the same meeting the directors passed a vote of appreciation of the past and present services of Dr. A. M. Cloudman, pathologist and senior member of the laboratory staff.

JOSEPH HUMMEL, associate professor of industrial engineering at the Pennsylvania State College, has been appointed national vice-president of the technical division of the Society for the Advancement of Management. He will have the responsibility of coordinating all research and educational projects for time and motion study, job evaluation and wage rate structure, wage incentive plans, budgets, standardization and office management.

DR. AUGUST LEROY STRAND, for the past five years president of Montana State College, previously professor of entomology and head of the department, has been appointed president of Oregon State College, succeeding Dr. Frank L. Ballard. Dean F. A. Gillfillan, professor of pharmacy, has been serving as acting president.

DR. JOSEPH S. ILLICK, professor of forest management and head of the department of forestry of the New York State College of Forestry at Syracuse University, formerly Pennsylvania State Forester, has been appointed acting dean of the college in succession to Dean Samuel N. Spring, who is on leave of absence on account of ill health.

Popular Astronomy states that Professor A. E. Douglass, formerly director of the Steward Observatory of the University of Arizona, has been recalled from retirement. This was necessitated by the absence of Dr. Edwin F. Carpenter, who is now on the staff of the Officers School at Ithaca, N. Y. Dr. Paul Jose and J. F. Foster are the other members of the staff of the observatory for this year.

HAROLD P. WESTMAN, formerly secretary of the Institute of Radio Engineers, has joined the staff of the American Standards Association to spend full time on a study of War Standards for Radio.

PROFESSOR RICHARD FOSTER FLINT, of the department of geology of Yale University, has been granted leave of absence. He has been commissioned a major in the Army Air Corps.

PROFESSOR THOMAS W. HARRELL, on leave from the department of psychology of the University of Illinois, on duty at the headquarters of the Army Air Forces, has been promoted to the rank of major. His assignment is in the Personnel Research Section, Office of the Director of Personnel. He has been in the War Department since May, 1940, where he has been working in a civilian capacity as senior personnel technician in the office of the Adjutant General.

It is reported in *Chemical and Engineering News* that Charles Allen Thomas and Osborne Bezanson have been elected to the board of directors of the Monsanto Chemical Company. Dr. Thomas is director of the Central Research Department of the company, and Mr. Bezanson is vice-president and general manager of the Texas Division.

DR. ERNEST W. REID, research chemist, director of the Commodities Bureau of the War Production Board, has been appointed director general for the Industry Division.

DR. E. C. WILLIAMS, chemical director and vice-president of the General Aniline and Film Corporation, has been placed in charge of its new research laboratory at Easton, Pa. The laboratory has a staff of fifty chemists, physicists and chemical engineers, later to be increased in number.

PROFESSOR D. B. JOHNSTONE-WALLACE, of Cornell University, formerly of the University of Leeds, has a year's leave of absence to enable him to accept an invitation of the British Ministry of Agriculture to

become head of the agricultural department of the National Institute for Research in Agricultural Engineering, which has been moved from the University of Oxford to York. His work will deal with the development of mechanical processes to increase food production, including grass silage for livestock, dehydration of grasses and legumes, plowing up of grassland for other crops and establishment of new pastures.

DR. WALTER H. HODGE, instructor in botany at the Massachusetts State College, has leave of absence to accompany an expedition to Peru under the direction of the Board of Economic Warfare. He will aid in the search for new sources of quinine.

PROFESSOR HENRY A. BOORSE, of the department of physics of Barnard College, Columbia University, has leave of absence for the spring semester to engage in government work. His lectures will be given by Professor Robert B. Morrissey, of the Manhattanville College of the Sacred Heart.

DR. GEORGE SPERTI, director of the Institutum Divi Thomae, has completed arrangements for an expedition early in February into the Florida Everglades in search of rare plants, which it is believed will yield a supply of vital drugs cut off by the war.

DR. C. D. JEFFRIES, associate professor of soil technology at the Pennsylvania State College, has, at the invitation of Dr. Carlos Chardon, director of the Institute of Tropical Medicine at the University of Puerto Rico, become visiting soil technologist at the institute for a period of two months. The work consists of outlining projects relative to the study of tropical soils with particular reference to the relationships of rocks and minerals to soil-forming processes. Headquarters will be at the agricultural branch at Mayaguez. The institute is a new agency organized for the purpose of promoting a better understanding from the standpoint of scientific agriculture among the colleges and universities of North and South America.

THE fifth annual expedition of the National Geographic Society-Smithsonian Institution archeological expedition left Washington on January 15 for southern Mexico to study pre-Columbian civilizations. Matthew W. Stirling, chief of the Bureau of American Ethnology, is leader of the expedition. Other members are Dr. Waldo Wedel, of the division of archeology, U. S. National Museum; Walter A. Weber, artist and ornithologist of the museum, and Richard H. Stewart, staff photographer of the National Geographic Society.

AMERICO ALBALA, consulting engineer of the Ministry of Economics and Commerce, Chile, general sec-

retary of the Pan American Institute of Mining Engineering and Geology, has been commissioned by the Chilean Government to study fuel technology at the Pennsylvania State College. He plans to spend ten months in studying methods of reducing coal to liquid fuel and metallurgical coke.

By unanimous vote of the council of the American Association of Pathologists and Bacteriologists, the annual meeting planned for April 1 and 2, at the University of Chicago, has been cancelled. According to a statement issued by Dr. Howard T. Karsner, *secretary*, this action was determined by the great pressure of work due to depleted staffs, the presence of many members in the military service, limitations on transportation, doubt concerning hotel accommodations and the probability that any program that might have been arranged would not be comprehensive. The authorities of the University of Chicago were willing to proceed with arrangements, but the council deemed cancellation patriotic and wise. The council will meet early in April to transact necessary business. Nominations for membership, together with supporting data and not less than two letters of recommendation, should be in the office of the secretary not later than April 1.

AN Associated Press dispatch dated January 27 reports that a joint resolution requesting President Roosevelt to issue a proclamation designating February 11 as Thomas Alva Edison Day has been introduced in the House by Representative Frank L.

Sundstrom of New Jersey. Mr. Sundstrom stated that the celebration of Mr. Edison's birthday this year was being directed toward helping to increase war production.

It is reported in the *Journal* of the American Medical Association that essays for the Lucien Howe Prize of the Medical Society of the State of New York must be received by the chairman of the committee on prize essays, Dr. Charles G. Heyd, 292 Madison Avenue, New York, not later than March 1. One hundred dollars will be presented for the best original contribution on some branch of surgery, preferably ophthalmology, during the annual meeting of the medical society in Buffalo in May.

By the will of Mrs. Anna Burr, the bulk of her estate of the value of \$2,000,000 is bequeathed to the Lankenau Hospital of Philadelphia in memory of her husband, the late Edward H. Burr, one of the chief owners of the old Link-Belt Company. The fund will be used for cancer research.

The Biological Bulletin is publishing, as a separately bound supplement to its February issue, a serial list of all the holdings of the Marine Biological Laboratory Library. It covers approximately eighty pages, and lists with cross references the 2,259 titles of journals in the library. Titles are listed alphabetically to conform to the arrangement of the stacks in the library, and hence should serve as a guide book to the library itself as well as an aid in securing microfilm copies of articles.

DISCUSSION

THE HARDY-WEINBERG LAW

ONE of the basic relations in the genetics of populations is expressed by the statement that in a very large random-mating population in which two alleles A and A' occur in the frequencies p and q ($=1-p$) the three types AA, AA' and A'A' are expected to remain in equilibrium from generation to generation at frequencies of p^2 , $2pq$ and q^2 , in the absence of mutation or selection. This theorem, of which a special case was discovered by Pearson (1904), is known in its general formulation as Hardy's law, or Hardy's formula (*e.g.*, Sinnott and Dunn, 1939, Sturtevant and Beadle, 1939, and Dobzhansky, 1941). It is the purpose of this note to point out that the important population formula was independently and simultaneously recognized by the Stuttgart physician, Wilhelm Weinberg (1862-1937). On January 13, 1908, Weinberg gave a lecture before the "Verein für vaterländische Naturkunde in Württemberg" under the title "Über den Nachweis der Vererbung beim Menschen."

In the course of a keen exposition of both the difficulties to be met by students of human heredity and of statistical approaches which should help to overcome these difficulties, he derived the equilibrium law. The full lecture was printed in the *Jahreshefte* of the Verein, Volume 64: 368-382 (1908), and appeared sometime before the fall of 1908 as judged by the stamped entry on the title page of the volume which I have consulted: "Academy of Natural Sciences of Philadelphia, Sept. 28, 1908." Hardy's note in *SCIENCE* is signed April 5, 1908, and is published in the July 10, 1908, number.

The following is a translation of the relevant section of Weinberg's communication making corrections for three minor typographical errors:

Quite different is the situation when one considers Mendelian inheritance under the influence of panmixis. I start from the general premise that there are originally present m each of pure male and female representatives of type A and correspondingly n of each pure repre-